

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 12, 2008 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 14 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gustafsson (U.S. Patent 5,746,958) in view of Taguchi et al. (U.S. Patent 6,228,301), Barnes (U.S. Patent 3,538,595), Dahl et al. (US 6,153,293), Nishibori (US 6,066,367) and Severson et al. (US 5,322,584).

Gustafsson (U.S. Patent 5,746,958) discloses a manufacturing apparatus to manufacture a wood-like molded product through extrusion molding, the apparatus including a first crushing device 30B to crush or pulverize a resin waste material, a second crushing device 30A to crush or pulverize a wood waste material, the first crushing device 30B being separate from the second crushing device 30A (i.e., fig. 1), a

Art Unit: 1791

magnet to separate metals (i.e., col. 5, lines 17-21), a blending mixer 40, 100 to mix the crushed resin waste material and the crushed wood waste material to prepare a mixed material such that the mixed material contains 40 to 65 wt% of wood portion, 35 to 60 wt% of resin portion and small amounts of impurities (i.e., col. 5, lines 59-64; col. 6, lines 42-60; col. 9, lines 53-56), an extrusion molding device 70 to heat and melt the mixed material, and mold the mixed material into an extrusion mold product through extrusion molding, and a sizer member 95. A first path is configured to supply the crushed resin waste material obtained from the first crushing device 30B to the blending mixer 40, 100 (i.e., fig. 1), and a second path is configured to supply the crushed resin waste material obtained from the second crushing device 30A to the blending mixer 40, 100 (i.e., fig. 1). However, Gustafsson (U.S. Patent 5,746,958) does not disclose the crushing device 30A including three devices (namely, as recited in the instant claims, the second crushing device, the third crushing device and the grinding device), the extrusion molding device molding the material into a cylindrical shape, the sizer member including an opening portion having an inner diameter which is substantially the same as an outer diameter of the extrusion mold product in the cylindrical shape produced by the extrusion molding device through the extrusion molding, a cutting device to cut the extrusion mold product into a predetermined length, the molding temperature of the extrusion molding device being set to 180 to 220 °C, a sanding processing device, a coating device or a drying device.

Taguchi et al. (U.S. Patent 6,228,301) discloses a manufacturing apparatus to manufacture a wood-like molded product through extrusion molding, the apparatus

Art Unit: 1791

including pulverizing equipment including a first pulverizing device to crush a wood waste material (i.e., col. 8, lines 1-16), a second pulverizing device to further crush the crushed wood waste material crushed by the first pulverizing device into fine chips (i.e., col. 8, lines 17-32), and a third pulverizing device to grind the fine chips from the second pulverizing device into a fine powder (i.e., col. 8, lines 33-56), the first, second and third pulverizing devices being separate devices, a blending mixer to mix crushed resin waste material and the crushed wood waste material from the pulverizing equipment to prepare a mixed material (i.e., col. 8, lines 63-67), and an extrusion molding device to extrude the mixed material into desired shapes (col. 9, lines 1-4).

Barnes (U.S. Patent 3,538,595) discloses a manufacturing apparatus to manufacture an extrusion mold product with a cylindrical main body through extrusion molding, the apparatus including an extrusion molding device 2 to heat and melt an extrusion material, and mold the material into a cylindrical shape 1 through extrusion molding, a sizer member 3, 6 which includes an opening portion of which an inner diameter is substantially the same as an outer diameter of an extrusion mold product 1 in the cylindrical shape produced by the extrusion molding device 2 through the extrusion molding, and adjusts a sectional shape and a dimension of the extrusion mold product 1 by inserting the extrusion mold product 1 into the opening portion, and a cutting device 8 to cut the extrusion mold product 1, of which the sectional shape and the dimension are adjusted by the sizer member 3, 6, into a predetermined length, thus forming the cylindrical main body.

Dahl et al. (US 6,153,293) discloses a molding temperature of an extrusion molding device for extruding a wood-like molded product being set to 320 to 400 °F (160 to 204.4 °C).

Nishibori (US 6,066,367) discloses an apparatus for making a wood-like product including an extruder for extruding a wood-like product (i.e., col. 4, lines 48-55), and apparatus for finishing the extruded product including a sanding processing device configured to form a plurality of streaks on the extrusion molded product by sanding a surface thereof with a sanding paper (i.e., col. 6, lines 26-62; fig. 7), and a coating device configured to make the surface of the extrusion molded product glossy which coat is then dried (i.e., col. 6, line 62, to col. 7, line 4; col. 8, lines 27-34).

Severson et al. (US 5,322,584) discloses a wood product that is finished by a sanding device, a coating device, and a drying device configured to include a drying region where the product is conveyed from the coating device and is dried, the drying device accelerating the drying of the coating (i.e., col. 7, line 63, to col. 8, line 7).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the second crushing device of Gustafsson (U.S. Patent 5,746,958) to include the first, second and third pulverizing devices of Taguchi et al. (U.S. Patent 6,228,301) (which would correspond to the second crushing device, the third crushing device and the grinding device of the instant claims, respectively) because such a modification would enable the wood waste material to be pulverized in a three step process which effectively pulverizes the wood waste material from lumps to fine powdery particles, as disclosed by Taguchi et al. (U.S. Patent 6,228,301: i.e., col. 7,

Art Unit: 1791

line 60, to col. 8, lines 62) and because Taguchi et al. (U.S. Patent 6,228,301: i.e., col. 7, lines 60-67) discloses that a single pulverizing process (i.e., one device) or a three step pulverizing process (i.e., three devices) are alternatives in the art; and to modify the apparatus of Gustafsson (U.S. Patent 5,746,958) such that the extrusion molding device molds the mixed material into a cylindrical shape, that the sizer member includes an opening portion having an inner diameter which is substantially the same as an outer diameter of the extrusion mold product in the cylindrical shape produced by the extrusion molding device through the extrusion molding, and that a cutting device to cut the extrusion mold product into a predetermined length is further included because such a modification would provide an extrusion mold product with a cylindrical shape which was cut to a predetermined length, as disclosed by Barnes (U.S. Patent 3,538,595). Note that it is well known and conventional in the extrusion art to extrude cylindrical shapes, i.e., pipes, to size or calibrate the cylindrical shapes, and to cut the cylindrical shapes to length, as disclosed by Barnes (U.S. Patent 3,538,595). With the proposed modification above, the second path would then extend from the third pulverizing device (i.e., the grinding device) to the blending mixer. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the molding temperature of the extrusion molding device to be set to 320 to 400 °F (160 to 204.4 °C) because such molding temperature is well known and conventional in the art for making a wood-like product, as disclosed by Dahl et al. (US 6,153,293); and to further modify the apparatus with a sanding processing device, a coating device and a

Art Unit: 1791

drying device, as respectively recited by Nishibori (US 6,066,367) and Severson et al. (US 5,322,584) because such a modification would enable finishing of the product.

4. Claims 15 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gustafsson (U.S. Patent 5,746,958) in view of Taguchi et al. (U.S. Patent 6,228,301), Barnes (U.S. Patent 3,538,595), Dahl et al. (US 6,153,293), Nishibori (US 6,066,367) and Severson et al. (US 5,322,584) as applied to claims 14 and 25 above, and further in view of Hayashi et al. (U.S. Patent 5,301,881).

Gustafsson (U.S. Patent 5,746,958), Taguchi et al. (U.S. Patent 6,228,301), Barnes (U.S. Patent 3,538,595), Dahl et al. (US 6,153,293), Nishibori (US 6,066,367) and Severson et al. (US 5,322,584) disclose the apparatus substantially as claimed, as mentioned above, except for an eddy current separator device and a gravity separator, as recited by instant claim 15.

Hayashi et al. (U.S. Patent 5,301,881) disclose a metal separating apparatus for separating metals from other materials, the apparatus including a magnetic sorter 10, an eddy current separator device 11 to separate a metal which is not attracted to the magnetic sorter but has conductivity, and a gravity separator 24 to separate a substance that is not separated by the magnetic sorter and the eddy current separator device (i.e., fig. 2).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to further modify the apparatus with an eddy current separator device and a gravity separator because such a modification would separate various materials from other materials to be recycled, as disclosed by Hayashi et al. (U.S.

Art Unit: 1791

Patent 5,301,881: i.e., cols. 1-2); because such a modification would remove other metals which were not removed by the magnet of Gustafsson (U.S. Patent 5,746,958); and/or because Gustafsson (U.S. Patent 5,746,958; col. 5, lines 17-21) discloses that removing metal fragments is desired because such metal fragments could cause equipment failure and result in costly repairs and downtime.

Response to Arguments

5. Applicant's arguments with respect to the instant claims have been considered but are moot in view of the new ground(s) of rejection.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSEPH LEYSON whose telephone number is (571)272-5061. The examiner can normally be reached on M-F 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gupta Yogendra can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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